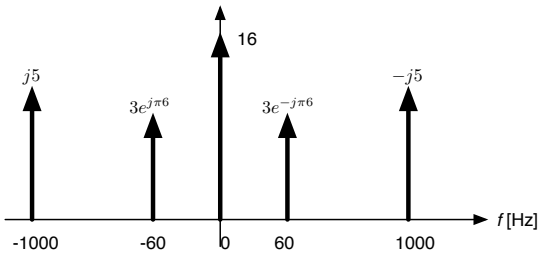
Quiz 1 will be inspired by these questions, but will probably not be exactly like any one of them or be worded in the same way. It may also ask you questions that build on or apply the ideas explored in the questions below. So, it is important that you understand the underlying ideas, not just be able to parrot them.

1. For the signal $x(t) = A\cos(\omega|_0 t + \theta)$ compute the Fourier transforms $X(j\omega)$ and $X(f)$.
2. For the signal with the Fourier transform $X(f)$ shown below compute $x(t)$ (i.e. the inverse Fourier transform).



3. Question 1.1 from the Sklar text.
4. Question 1.2 from the Sklar text.
5. Question 1.3 from the Sklar text.
6. Question 1.8 from the Sklar text.
7. Question 1.10 from the Sklar text.
8. Question 1.12 from the Sklar text.
9. Question 1.13(d) from the Sklar text.
10. Question 1.14 from the Sklar text.
11. Question 1.15 from the Sklar text.
12. In the transmitter what block did we say comes before the line coder? What are two key blocks comprising an A-to-D? What is the name of the block that tries to remove distortion in the receiver? Sketch a $\text{sinc}(t/T)$ waveform. Sketch its spectrum and indicate key features (with symbols) on your plot.
13. Sketch the power spectrum of an NRZ waveform with normalized signal magnitude $\pm A$. Indicate key features (with symbols) on your plot.
14. A pulse train (in time) consists of pulses A units high and d units wide spaced T units apart (i.e. with a period of T. Sketch the power spectrum. Indicate key features (with symbols) on your plot.
15. For the sequence $x[n < 0] = 0$, $x[0] = 2$, $x[1] = 1$, $x[2] = 0$, $x[3] = 1$, $x[n > 3] = 0$ find the DTFT $X(e^{j\Omega})$.